

REMARKS

Claims 1 to 30 are in the application. Claims 1, 11, and 21 are independent. Favorable reconsideration and further examination are respectfully requested.

In the Office Action, claims 1 to 30 were rejected under 35 U.S.C. §103 over U.S. Patent No. 5,838,813 (Kancler) in view of U.S. Patent No. 5,926,401 (Montag). As shown above, Applicant has amended the claims to define the invention more clearly. In view of these amendments, withdrawal of the art rejection is respectfully requested.

Amended independent claim 1 defines a method of rendering a three-dimensional model comprised of volumetric three-dimensional data. The method includes obtaining a characteristic of the three-dimensional model, and determining a three-dimensional dither pattern based on the characteristic. The three-dimensional dither pattern comprises points in a volumetric region, which are assigned values to make the dither pattern correspond to the characteristic. A dithered version of the three-dimensional model is rendered using the three-dimensional dither pattern.

The applied art is not understood to disclose or to suggest the foregoing features of claim 1. In particular, the art is not understood to disclose or to suggest at least determining a dither pattern comprised of points in a volumetric region, where the points are assigned values to make the dither pattern correspond to a characteristic of a three-dimensional model.

More specifically, Kancler discloses improving the quality of an image by dithering a sensing apparatus used to generate that image. Dithering, in Kancler, refers to moving a sensor in the apparatus slightly between readings, and averaging the results to determine the actual

value. It does relate to points in a volumetric region, much less to points that are assigned values to make a resulting dither pattern correspond to a characteristic of a three-dimensional model.

Montag was cited for its alleged disclosure of using a dither pattern comprised of points in a volumetric region to represent or render a three-dimensional model. In this regard, Montag notes that dither patterns, apparently in the visual imaging sense, are used in displaying images representing three-dimensional weather data. Montag, however, does not explain how this is done (see, e.g., column 5, lines 23-24 and 54-60; column 8, lines 18-20). Thus, Montag does not disclose or suggest determining a three-dimensional dither pattern based on a characteristic.

Furthermore, Montag uses dithering to determine the spacing of data elements that represent actual points in three-dimensional space. The invention of claim 1, by contrast, uses dither patterns to set the values of points in a volumetric space so that, as a whole, the points represent a characteristic of the volumetric space. For example, if a volumetric space has a density of 0.5, and three-dimensional pixels that define the space could have density values of 1.0 or 0.0 (present or absent, representing solid or empty), the dither pattern might comprise setting half of the pixels to 1.0 and the other half to 0.0, with their distribution uniform or random, depending on the dithering algorithm used. Montag is not understood to disclose or suggest such a use of dither patterns to represent characteristics of volumetric data.

Thus, even if Montag were combined with Kancler in the manner suggested in the Office Action, the resulting hypothetical combination would still fail to disclose or to suggest at least determining a dither pattern comprised of points in a volumetric region, where the points are

assigned values to make the dither pattern correspond to a characteristic of a three-dimensional model. For at least this reason, claim 1 believed to be allowable.

Amended independent claims 11 and 21 are article of manufacture and apparatus claims, respectively, that roughly correspond to claim 1. These claims are also believed to be allowable for at least the same reasons noted above with respect to claim 1.

Each of the dependent claims is also believed to define patentable features of the invention. Each dependent claim partakes of the novelty of its corresponding independent claim and, as such, has not been discussed specifically herein.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

In view of the foregoing amendments and remarks, Applicant respectfully submits that the application is in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Applicant's undersigned attorney can be reached at the address shown below. All telephone calls should be directed to the undersigned at 617-521-7896.

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No additional fees are believed to be due for this Amendment; however, if any fees are due, please charge them to deposit account 06-1050, referencing Attorney Docket No. 10559-478001.

Respectfully submitted,

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